Overview V1 Report - Comprehensive Documentation

## Understanding Charts, Scores, and Investment Insights

Document Version: 1.0

# Table of Contents

1. 1. Executive Summary & Report Overview
2. 2. Analysis Framework (4-Step Workflow)
3. 3. Timeframe Structure & Methodology
4. 4. Scoring Systems & Formulas
5. 5. Chart Types & Interpretation Guide
6. 6. Industry Analysis Components
7. 7. Multi-Timeframe Leadership Analysis
8. 8. Investment Insights & Interpretation
9. 9. Technical Appendix

# 1. Executive Summary & Report Overview

The Overview V1 PDF report is a comprehensive daily market analysis tool that implements a sophisticated 4-step analytical workflow. It combines multi-timeframe performance analysis, advanced sector rotation detection, and professional visualization to provide actionable investment insights.

## Key Features:

* Multi-timeframe analysis across 5 periods (1D, 7D, 22D, 66D, 252D)
* Market cap-weighted industry performance calculations
* Advanced momentum scoring with dynamic weighting
* Sector rotation signal detection (STRONG\_IN, ROTATING\_OUT, NEUTRAL)
* Leadership consistency analysis across timeframes
* 12+ professional visualization types
* Automated investment recommendations per timeframe

## Report Scope:

The report typically generates 12-15 pages covering performance analysis, sector analysis, industry deep-dives, multi-timeframe leadership patterns, and executive recommendations. All analysis adapts dynamically to available data timeframes.

# 2. Analysis Framework (4-Step Workflow)

The Overview V1 report follows a systematic 4-step analytical workflow:

## Step 1: Performance Analysis

• Calculates multi-timeframe performance metrics (1D through 252D)  
• Computes dynamic momentum scores with timeframe-specific weighting  
• Identifies trend consistency patterns  
• Generates top performer rankings for each timeframe

## Step 2: Sector/Industry Analysis

• Market cap-weighted industry performance calculations  
• Industry momentum scoring and classification (LEADERS/EMERGING/DECLINING/LAGGARDS)  
• Rotation signal detection using short-term vs long-term performance  
• Risk metrics including Gini coefficient for concentration analysis  
• Leader/laggard identification within each industry

## Step 3: Visualization Generation

• Automated generation of 12+ chart types  
• Professional styling with consistent color schemes  
• Dynamic chart adaptation based on available data  
• High-resolution PNG output for report integration

## Step 4: PDF Assembly

• Professional report layout with structured sections  
• Executive summary with key findings  
• Investment recommendations per timeframe  
• Dynamic section titles with timeframe labeling

# 3. Timeframe Structure & Methodology

The report operates on 5 standard timeframes, each serving specific analytical purposes:

## 1D (Daily)

Intraday momentum, immediate market reactions

## 7D (Weekly)

Short-term trend identification, weekly patterns

## 22D (Monthly)

Monthly trend analysis, earnings cycle impacts

## 66D (Quarterly)

Quarterly performance, earnings season effects

## 252D (Annual)

Long-term trend analysis, annual performance patterns

## Dynamic Adaptation

The system automatically adapts when certain timeframes are unavailable:  
• Momentum weights are recalculated based on available timeframes  
• Chart titles include dynamic timeframe labels  
• Analysis focuses on longest available timeframe for classification  
• Graceful degradation ensures report completeness

# 4. Scoring Systems & Formulas

## 4.1 Momentum Score

The momentum score combines performance across all timeframes using dynamic weighting:

### Formula:

Momentum Score = Σ(Performance\_i × Weight\_i) for i = 1 to n timeframes

### Weight Distribution:

* 5 timeframes: [0.05, 0.15, 0.25, 0.25, 0.30] for [1D, 7D, 22D, 66D, 252D]
* 4 timeframes: [0.10, 0.20, 0.30, 0.40]
* 3 timeframes: [0.20, 0.30, 0.50]
* 2 timeframes: [0.30, 0.70]

Weights favor longer-term performance while maintaining sensitivity to shorter-term movements.

## 4.2 Industry Classification System

Industries are classified using percentile-based performance rankings:

LEADERS: ≥ 75th percentile - Top quartile performers

EMERGING: 50th - 75th percentile - Above median, gaining momentum

DECLINING: 25th - 50th percentile - Below median, losing momentum

LAGGARDS: < 25th percentile - Bottom quartile performers

## 4.3 Rotation Signals

Rotation signals combine short-term (1D/7D) and long-term performance:

* STRONG\_IN: Short-term performance > 0 AND improving trend
* ROTATING\_OUT: Short-term performance < 0 AND declining trend
* NEUTRAL: Mixed or unclear signals

## 4.4 Leadership Consistency Scores

Two key metrics measure leadership consistency:

### Persistence Score:

Persistence Score = Leadership Count / Total Available Timeframes  
Measures how often a stock appears as a leader across all possible timeframes.

### Consistency Score:

Consistency Score = Leadership Count / Total Appearances  
Measures the reliability of leadership when the stock appears in rankings.

## 4.5 Gini Coefficient (Concentration Risk)

Measures concentration of performance within industries (0 = equal distribution, 1 = maximum concentration):

Gini = (n + 1 - 2 × Σ(cumulative\_sum)) / (n × total\_sum)  
where n = number of stocks, values are sorted in ascending order.

# 5. Chart Types & Interpretation Guide

## 5.1 Performance Bar Charts

Description: Show top 10 performers for each timeframe with horizontal bars.

### How to Read:

* Longer bars indicate stronger performance
* Color coding helps identify patterns across timeframes
* Look for stocks appearing in multiple timeframe rankings

### Key Insights:

Identify momentum consistency and timeframe-specific leaders

## 5.2 Sector Performance Heatmap

Description: Matrix showing sector performance across all timeframes.

### How to Read:

* Green/warm colors = positive performance
* Red/cool colors = negative performance
* Patterns across rows reveal sector consistency

### Key Insights:

Spot sector rotation trends and consistent performers

## 5.3 Momentum Scatter Plot

Description: Plots momentum score vs long-term performance with sector color coding.

### How to Read:

* Upper right quadrant: High momentum + strong long-term performance
* Upper left: Strong long-term but weakening momentum
* Lower right: Poor long-term but building momentum

### Key Insights:

Identify momentum shifts and sector positioning

## 5.4 Tornado Chart (Sector Dispersion)

Description: Shows performance range within each sector.

### How to Read:

* Longer bars indicate higher dispersion (more stock picking opportunity)
* Shorter bars suggest sector-wide movements
* Position relative to zero line shows sector direction

### Key Insights:

Assess sector internal dynamics and stock selection opportunities

## 5.5 Industry Performance Matrix

Description: Heatmap of top 15 industries across timeframes.

### How to Read:

* Consistent horizontal patterns indicate steady industry performance
* Vertical patterns suggest timeframe-specific industry rotation
* Color intensity reflects performance magnitude

### Key Insights:

Deep industry analysis for tactical allocation decisions

## 5.6 Industry Momentum Bubble Chart

Description: Bubble plot with short-term vs long-term performance, sized by market cap.

### How to Read:

* Bubble size represents market cap or stock count
* Position indicates performance momentum
* Color coding shows rotation signals

### Key Insights:

Visualize industry momentum and rotation patterns

## 5.7 Multi-Timeframe Leaders Grid

Description: 6-panel grid showing leaders vs laggards for top industries across timeframes.

### How to Read:

* Each panel represents one industry
* Different colors/patterns for each timeframe
* Compare leader/laggard ratios across timeframes

### Key Insights:

Detailed industry leadership analysis across all timeframes

## 5.8 Leadership Consistency Heatmap

Description: Shows top 20 most consistent leaders across timeframes.

### How to Read:

* Green = Leader, Red = Laggard, Gray = Not in ranking
* Horizontal patterns show consistency
* Vertical patterns show timeframe-specific behaviors

### Key Insights:

Identify most reliable long-term leaders

# 6. Industry Analysis Components

## 6.1 Market Cap Weighting

Industry performance calculations use market cap weighting when available:  
• Larger companies have proportionally greater impact on industry performance  
• More accurate representation of investable industry performance  
• Fallback to simple mean when market cap data unavailable

## 6.2 Industry Risk Metrics

* Performance Range: Maximum performance spread within industry
* Performance IQR: Interquartile range (75th - 25th percentile)
* Concentration Ratio: Gini coefficient measuring performance concentration
* Stock Count: Number of stocks in industry analysis

## 6.3 Leader/Laggard Identification

Within each industry, stocks are classified as leaders or laggards:  
• Leaders: Top 50% of industry performers  
• Laggards: Bottom 50% of industry performers  
• Analysis performed across all timeframes  
• Results visualized in multi-panel comparison charts

# 7. Multi-Timeframe Leadership Analysis

This advanced analysis identifies stocks showing consistent leadership patterns across multiple timeframes, providing insights into momentum persistence and rotation patterns.

## 7.1 Leadership Identification Process

1. For each timeframe, identify top performers (typically top 15-20)
2. Track which stocks appear as leaders across multiple timeframes
3. Calculate persistence and consistency scores
4. Analyze rotation patterns between timeframes

## 7.2 Consistency Scoring Interpretation

Persistence Score > 0.8: Highly consistent leader across timeframes

Persistence Score 0.6-0.8: Generally consistent with some variation

Persistence Score 0.4-0.6: Moderate consistency, timeframe-dependent

Persistence Score < 0.4: Inconsistent or timeframe-specific leadership

## 7.3 Rotation Pattern Analysis

The analysis identifies several rotation patterns:  
• Momentum Acceleration: Leadership increasing across longer timeframes  
• Momentum Deceleration: Leadership decreasing across longer timeframes  
• Timeframe Rotation: Leadership shifting between specific timeframes  
• Consistent Leadership: Stable leadership across all timeframes

# 8. Investment Insights & Interpretation

## 8.1 Timeframe-Specific Investment Strategies

### 1D-7D (Short-term)

Focus: Momentum trading, news reaction plays

Key Signals: Strong rotation signals, momentum score acceleration

Cautions: High volatility, news-driven movements

### 22D-66D (Medium-term)

Focus: Swing trading, earnings cycle plays

Key Signals: Sector rotation patterns, industry leadership shifts

Cautions: Earnings volatility, macro sensitivity

### 252D (Long-term)

Focus: Position building, fundamental strength

Key Signals: Consistent leadership, strong fundamentals

Cautions: Market cycle timing, valuation considerations

## 8.2 Sector Rotation Insights

* STRONG\_IN sectors: Consider overweight positions, momentum likely to continue
* ROTATING\_OUT sectors: Reduce exposure, consider profit-taking
* NEUTRAL sectors: Maintain market weight, wait for clearer signals
* Industry dispersion: High dispersion = stock picking environment, low dispersion = sector plays

## 8.3 Risk Management Considerations

* High Gini coefficient industries: Concentrated risk, diversify within industry
* Low consistency scores: Higher volatility, smaller position sizes
* Sector rotation patterns: Adjust portfolio weights based on rotation signals
* Timeframe divergence: Consider mixed signals, reduce conviction sizing

# 9. Technical Appendix

## 9.1 Data Requirements

* OHLCV price data across multiple timeframes
* Market capitalization data (optional but recommended)
* Sector and industry classifications
* Minimum 252 trading days of historical data for full analysis

## 9.2 Performance Calculation Details

Performance calculations use simple returns:  
Return = (Current Price - Previous Price) / Previous Price × 100  
  
Timeframe-specific calculations:  
• 1D: Current day vs previous day  
• 7D: Current price vs 7 trading days ago  
• 22D: Current price vs 22 trading days ago (monthly)  
• 66D: Current price vs 66 trading days ago (quarterly)  
• 252D: Current price vs 252 trading days ago (annual)

## 9.3 Statistical Methods

* Percentile calculations use linear interpolation
* Market cap weighting uses float-adjusted market capitalization when available
* Momentum scoring applies dynamic weight normalization
* Industry classification requires minimum 5 stocks per industry
* Leadership identification uses top 15 performers per timeframe (configurable)

## 9.4 Chart Generation Specifications

All charts generated at 300 DPI resolution using matplotlib/seaborn:  
• Professional color schemes optimized for print and digital viewing  
• Consistent styling across all chart types  
• Dynamic scaling based on data availability  
• PNG format for optimal quality and compatibility

*Generated by Overview V1 Documentation System*